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November 23, 1994

Dear Reader:

Enclosed for your review is a Draft Environmental Assessment (EA) prepared by the Department of State Lands (DSL) and the Bureau of Land Management (BLM). The EA evaluates a proposal by Montana Tunnels Mining, Inc. to raise the tailings impoundment embankment from the presently permitted elevation of 5515 feet to the elevation of 5600 feet.

Public comment on this EA will be received by the agencies until 5:00 p.m. December 16, 1994. Comments should be about adequacy of the EA in assessing issues, new information not considered that may influence the analyses, and clarification. Comments should be specific. The agencies will use these comments and agency responses, the EA, and the application to make a final decision on the permit. The decision may be to approve, approve with modifications, or deny the proposal.

Comments will be accepted by calling Bob Winegar at 444-2074 or by writing to:

Bob Winegar
Montana Department of State Lands
PO Box 201601
Helena, MT 59620-1601

Thank you for your time and consideration. Please call DSL if you have any questions.

Sincerely,

Bob Winegar

Robert C. Winegar
Program Manager
Hard Rock Bureau
Reclamation Division

SM/rhv

PLEASE RETURN

"AN EQUAL OPPORTUNITY EMPLOYER"

DEC 2 [illegible] 2006

Draft Environmental Assessment

for

Montana Tunnels Mining, Inc.
Operating Permit No. 00113

Tailings Impoundment Expansion

Prepared by

Montana Department of State Lands
and
U.S. Department of the Interior
Bureau of Land Management

November 23, 1994

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CHAPTER I: PURPOSE AND NEED FOR ACTION

A. PROPOSED ACTION

On January 27, 1994, the Montana Department of State Lands (DSL) received an application to amend operating permit #00113 from Montana Tunnels Mining, Inc. (MTMI), a wholly owned subsidiary of Pegasus Gold, Corp. The amendment to the permit is for expansion of the current tailings impoundment facility using the modified upstream construction method. The expansion will raise the embankment from the currently permitted elevation of 5515 feet MSL to the proposed elevation of 5600 feet MSL.

The expansion would increase the capacity of the facility from 49 million tons to 67 million tons and entail an increase in disturbance of 73 acres (6.2 acres in the tailings dam, 66.8 acres for the tailings pond). If the expansion is allowed, the total area covered by the embankment raise and expanded pond would increase from 181 acres to 254 acres.

The analyses in this document supplements previous analyses and will be used in agency decision making. The DSL and the Bureau of Land Management (BLM) must review and evaluate the proposal and determine whether to approve, approve with modifications, or deny the proposal.

B. PURPOSE AND NEED

MTMI recovers gold, silver, lead, and zinc from the Montana Tunnels mine. These minerals are used primarily for industrial purposes. MTMI has identified an additional 18 million tons of minable ore reserves. The purpose and need of the impoundment expansion is to increase the capacity of the tailings facility to allow for the storage of tailings from the processing of existing and new reserves. The new reserves would expand the mine life approximately 4 years from 1997 to the year 2001.

Background and Project Location

Montana Tunnels is located approximately 10 air miles due north of Boulder, MT, and 15 air miles south of Helena, MT. The permit boundary includes parts of Sections 8, 9, 16, and 17 in T7N, R4W, Jefferson County, MT (Figure 1). Figure 2 depicts the mine site and the surrounding area as well as perennial and ephemeral streams. Figure 3 depicts the general facility layout at MTMI.

The Montana Tunnels permit history is summarized as follows:

Permit	Date	Action
00113	2/20/86	1500 acres for mine and facilities
Amd 001	no date	plant site relocation
Amd 002	5/1/86	decrease in production/permit area reduced to 1497 acres

Amd 003	4/13/90	modified tailings impoundment construction
Amd 004	5/11/93	haulage road and capping rock stockpile construction - permit area expands to 1606 acres
Amd 005	1/24/94	waste rock dump design modification/water line return from impoundment - permit area expands to 1811 acres

To date, MTMI has posted a bond of $6,900,700 for the reclamation of all mining related disturbances.

Tailings Impoundment Construction Summary

Construction of the MTMI tailings impoundment began in 1986 with mill startup in early 1987. Knight Piesold, Ltd. (KPL) of Vancouver, British Columbia, Canada has been the sole designer for the facility. The method of raising the embankment by downstream construction was used for the first four stages (crest elevation 5423 MSL). This construction technique means that the staged progression of the embankment crest is in the downstream direction.

In 1989, MTMI submitted an amendment (003) to the permit proposing to raise the embankment to the 5515 elevation. Amendment 003 was approved in 1990. Embankment construction techniques for Amendment 003 replaced downstream construction with an upstream approach. MTMI built Stage IV (elevation 5423) in a traditional centerline fashion in order to convert to the upstream method. Stages V (elevation 5435) through IX (elevation 5515) were constructed using the upstream method. The upstream method means that the centerline of the embankment progresses in an upstream direction with each raise. MTMI has modified the traditional construction techniques of building each incremental lift on previously deposited tailings by placing 15 foot thick coarse rock layers over the tailings. Additional loading from subsequent lifts therefore is placed on the coarse rock layer and not directly on the tailings (Figure 4).

More detailed impoundment design, construction techniques, and stability analyses are presented in the 1986 EIS and the 1990 Amendment 003 EA. The reasons for altering construction methods from downstream to upstream are (MTMI, 1989):

- The existing process water collection pond (North Pond) can be maintained for the life of the project,
- The existing recovery well system can be maintained for the life of the project,
- Embankment construction material requirements can be significantly reduced,
- Problems with dirty supernatant solutions (reclaim water) would be eliminated by replacing the embankment filter reclaim system, and
- Reclamation of the tailings surface would be simplified by avoiding a concentration of tailings slimes in the deepest part of the basin, thereby reducing the potential for long-term settlements and surface ponding.

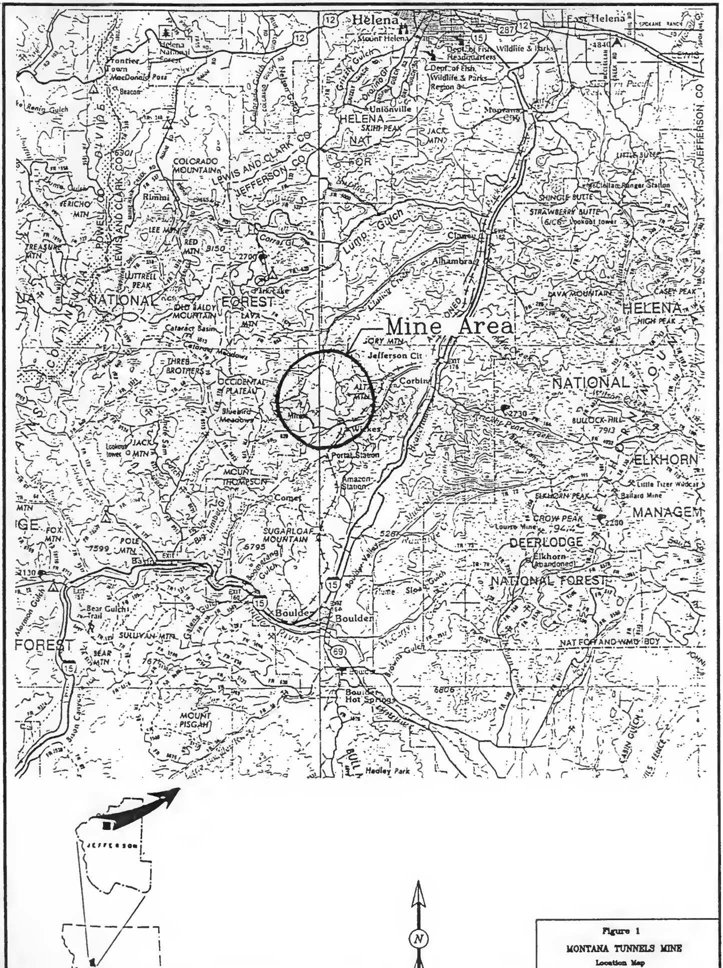
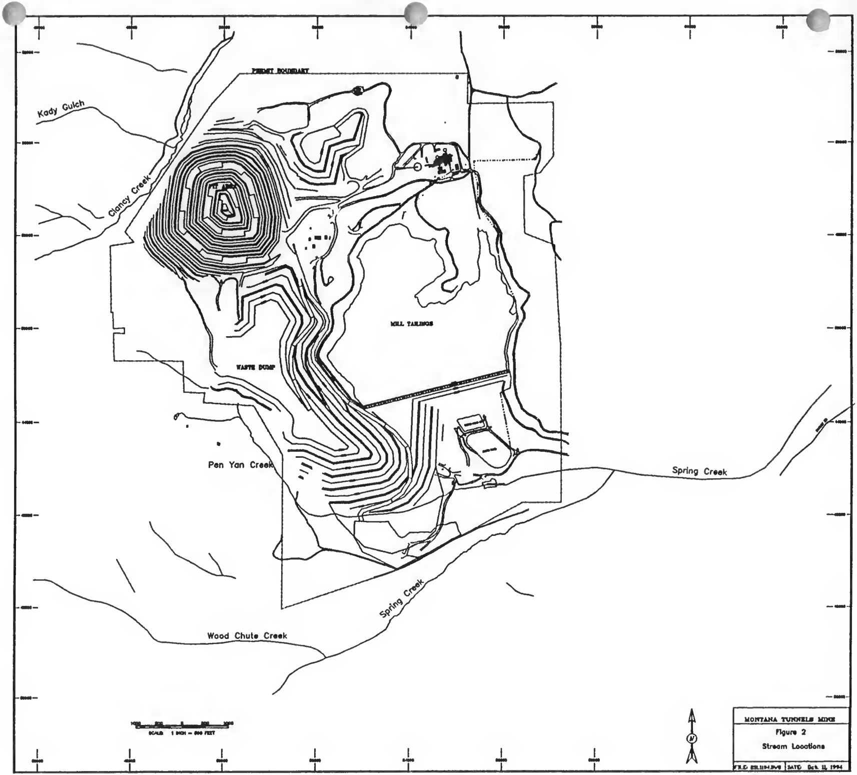


Figure 1

MONTANA TUNNELS MINE

Location Map

DATE: Nov 10, 1994

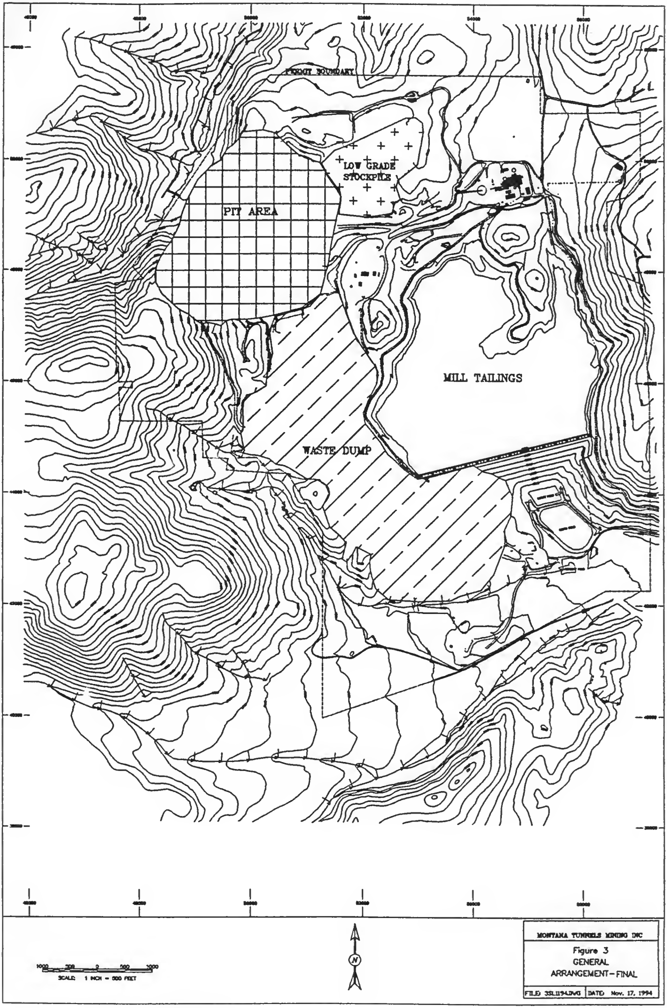


MONTANA TUNNELS MINE

Figure 2

Stream Locations

DATE Oct. 11, 1994



MONTANA TUNNELS MINING INC

Figure 3
GENERAL
ARRANGEMENT–FINAL

FILE: 3SL1194.DWG DATE: Nov. 17, 1994

CAD FILE: \PROJECT\31518\FIG\A65 Scale 1"=100' Plot scale 1=1

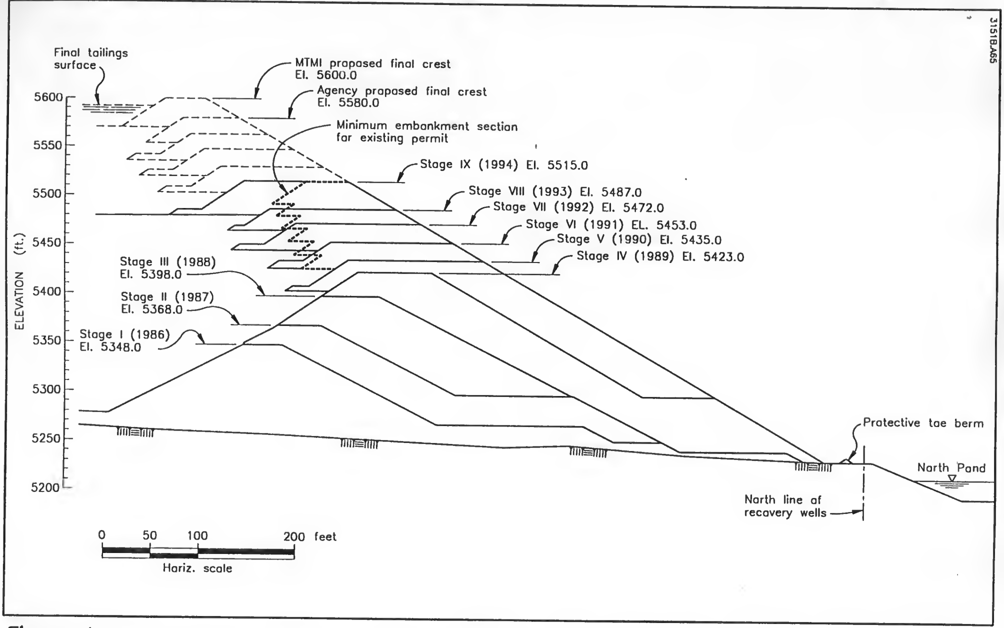

31518.A65
Final tailings surface
MTMI proposed final crest El. 5600.0
Agency proposed final crest El. 5580.0
Minimum embankment section for existing permit
Stage IX (1994) El. 5515.0
Stage VIII (1993) El. 5487.0
Stage VII (1992) El. 5472.0
Stage VI (1991) EL. 5453.0
Stage V (1990) El. 5435.0
Stage IV (1989) El. 5423.0
Stage III (1988) El. 5398.0
Stage II (1987) El. 5368.0
Stage I (1986) El. 5348.0
ELEVATION (ft.)
5600
5550
5500
5450
5400
5350
5300
5250
5200
Protective toe berm
North Pond
North line of recovery wells
0
50
100
200 feet
Horiz. scale

Figure 4

Construction history of MTMI tailings embankment.

C. SCOPING PROCESS

An interdisciplinary team composed of DSL and BLM engineers, hydrologists, geologists, and reclamation specialists defined the issues and alternatives. Issues were further refined based on information found in MTMI's 1984 permit application, the 1986 design contractor's final impoundment design document, the 1986 EIS, 1990 Amendment 003 EA, the 1993 KPL proposed action document, and the third party review document prepared by Water Waste & Land, Inc. (WW&L). Alternatives include the Company Proposed Alternative, the Agency Modified Alternative, and the No-Action Alternative. Detailed discussion of these alternatives is presented in subsequent chapters.

Public notice of receipt of the expansion application was published in Helena's *Independent Record* on February 8, 15, and 22, 1994. Scoping was initiated with this notice. No comments were received.

Issues Identified and Eliminated from Further Consideration

Two issues were identified and dismissed during the scoping process. These were overall effectiveness of the drainage system and static stability of the embankment.

The issue of the drainage system was dismissed from further consideration. It was determined that the drainage system was designed to carry up to 5000 gallons per minute (gpm) of water (MTMI, 1985). Due to the current use of wick drains and the tailings spiggotting practices employed by MTMI, water reporting to the embankment drainage system averages approximately 500 gpm (MTMI, 1989). Because the drainage system capacity is approximately 10 times what the system is presently carrying, the effectiveness of the drainage system was dismissed.

The issue of the static stability of the embankment was raised when the third party analyses showed that Factors-of-Safety were marginally less that the Factors-of-Safety calculated by the designer. The issue was dismissed when it was determined that the third party reviewer and the designer had used different static design models. Both of the models are universally accepted. The difference in the computed Factor-of-Safety (1.5) resulted from the different approaches and assumptions each model makes. WW&L computed a minimum Factor-of-Safety of 1.5 while KPL computed minimum Factors-of-Safety between 1.6 and 1.7. The minimum criteria Factor-of-Safety for static stability is 1.5.

Significant Issues

Post-seismic stability of the embankment remains an unresolved issue. Under certain post-earthquake conditions, the potential for embankment failure exists. Embankment failure would have some impact on the existing environment downgradient of the embankment. The embankment would have the potential to fail until dewatering and tailings consolidation of the facility is completed. The potential for failure exists during the operational life of the facility and for a 2 to 3 year period after operational shut-down.

D. REASONABLY FORESEEABLE ACTIVITIES

The newly identified 18 million tons of ore constitutes what is likely to be the remaining reserves at Montana Tunnels. Upon final mining and processing of this ore, MTMI will cease operations and begin final reclamation and closure tasks.

E. AGENCY ROLES AND RESPONSIBILITIES

Several federal and Montana regulatory agencies are involved in the review of this EA. The Montana Department of State Lands and the Bureau of Land Management are the lead agencies in the decision making process. The agencies will analyze the developed alternatives and make a decision regarding the final crest elevation of the embankment. The construction of a stable structure is paramount to the protection and integrity of the final facility reclamation.

Montana Department of State Lands (DSL)

The Montana Department of State Lands administers the Montana Metal Mine Reclamation Act (MMRA). The purpose of the act is to recognize and protect the usefulness, productivity and scenic values of the lands and waters within the state and to reclaim the lands used for mining to comparable stability and utility for beneficial uses. The act and its regulations (ARM 26.4.101 et seq.) set forth the steps to be taken in the issuance of an operating permit for and the reclamation of the applicant's proposed mine expansion. The act applies to all private, federal and state lands within Montana with the exception of Native American Reservation Lands.

The Commissioner of State Lands must decide whether to approve Montana Tunnels Mining, Inc.'s application as applied for, approve the application subject to stipulations, or deny the permit, as required by the MMRA Title 82, Chapter 4, Part 3, MCA.

DSL's rules (ARM 26.2.601 et seq.) implementing the Montana Environmental Policy Act (MEPA) (Title 75, Chapter 1, MCA) require preparation of an environmental analysis of the impacts of the project proposal and alternatives. The DSL has determined that an Environmental Assessment (EA) is appropriate for this project. The purpose of this EA is to:

a. Ensure that the agency uses the natural and social sciences and the environmental design arts in planning and decision-making;

b. Assist in the evaluation of reasonable alternatives and the development of conditions, stipulations or modifications to be made a part of a proposed action;

c. Examine and document the effects of a proposed action on the quality of the human environment, and provide the basis for public review and comment.

Bureau of Land Management (BLM)

The Bureau of Land Management, Department of the Interior, is the federal agency responsible for managing the mineral resources on public land administered by the BLM and other surface agencies. The site location for the tailings impoundment includes some lands administered by the BLM.

The BLM's requirement for environmental review under the National Environmental Policy Act (NEPA) will be met by this joint environmental review.

State Historic Preservation Office (SHPO)

The State Historic Preservation Office is responsible for cooperating with and advising DSL and the BLM when potentially valuable historical, archaeological, or other cultural resources are located within a project area (Montana Antiquities Act Sections 22-3-401 through 22-3-442, MCA, and the National Historical Preservation Act [P.L. 89-665 as amended and reauthorized E.O. 11593]). Advice given to the agencies may include comments on an applicant's plan for impact mitigation of sites eligible for nomination to the National Register of Historic Places. The office also reviews the EA or EIS to ensure compliance with cultural resource regulations.

During mine operation, the agency is responsible for monitoring compliance with historic preservation and monitoring plans. The additional lands that would be disturbed by the impoundment expansion have already been surveyed and evaluated under the above statutes.

Montana Department of Health and Environmental Sciences

Air Quality Bureau (AQB)

The Air Quality Bureau of the Department of Health and Environmental Sciences (DHES) administers the Clean Air Act of Montana (Title 75, Chapter 2, MCA). Any proposed project with potential to emit more than 25 tons per year of any pollutant must obtain an air quality permit prior to construction. The applicant must apply Best Available Control Technology to each emission source. The applicant must also demonstrate that the project would not violate Montana or Federal Ambient Air Quality Standards. MTMI currently holds an air quality permit. Rates of emissions would not change under the expansion proposal.

Water Quality Bureau (WQB)

The Water Quality Bureau of DHES is responsible for administration of the Montana Water Quality Act (Title 75, Chapter 5, MCA), providing for the classification of surface waters, establishing surface water quality standards, and administering permit programs to control the discharge of pollutants into state waters. Permitting needs are evaluated on an ongoing basis as water quality statutes and regulations change.

Department of Natural Resources and Conservation (DNRC)

DNRC administers two acts that are applicable to mining development in Montana. These are the Montana Major Facility Siting Act (MFSA) and the Montana Water Use Act. The MFSA requires state approval before construction of any electrical transmission line that exceeds 69 kilovolts or 10 miles in length. A water rights permit is required by the Montana Water Use Act for any surface water diversion or ground water withdrawal exceeding 100 gallons per minute. Existing transmission lines provide power to the site. MTMI received approval to relocate a section of the power line anticipating approval for the impoundment expansion. No changes would occur in water use or water rights as a result of the proposed expansion.

Hard Rock Mining Impact Board

The Hard Rock Mining Impact Board created by the passage of the Hard Rock Impact Act (Title 89, Chapter 6, Part 3, MCA) is attached to the Montana Department of Commerce. A quasi-judicial board, it is intended to act as a "referee" in hearing disputes between local government units and large-scale mineral developers over the impact mitigation plan prepared by the developer. In the impact mitigation plan, the developer identifies the increased public sector costs associated with major mineral development and commits to pay, according to a specified time schedule, all increased capital and net operating cost to local government units resulting from development.

MTMI has an approved HRIP at this time. No changes to the HRIP will occur as a result of the proposed expansion.

CHAPTER II: SUMMARY OF PROPOSALS AND ALTERNATIVES

This chapter summarizes the proposed action submitted by MTMI and the alternatives to the proposed action, including a no-action alternative.

Alternatives have been identified and refined to resolve potentially important issues. DSL and BLM specialists internally identified alternatives to the proposed action. Based on consultations with the third party impoundment design reviewer, the alternatives were further defined. The following sections and chapters include how the alternatives were developed, descriptions of each alternative, the environmental consequences of each alternative, and any mitigation measures required.

A. COMPANY PROPOSED ALTERNATIVE

The company proposed action is to raise the embankment crest to the 5600 foot elevation using the upstream construction method. This alternative would allow the placement of tailings material resulting from the milling of the recently identified 18 million tons of additional ore reserves.

Embankment Construction Methods

MTMI proposes to continue with the current upstream construction method that was adopted in 1990. Prior to 1990, embankment construction used the downstream method. More detailed discussion of the reasons for altering construction methods of the MTMI tailings impoundment can be found in the agencies's 1990 Amendment 003 EA, MTMI's Amendment 003 permit application, and KPL's 1989 Report on Alternative Development, Tailings Disposal Facilities.

Final Reclamation

The proposed tailings impoundment expansion would have some impact on the overall final reclamation plan. The surface area of the tailings impoundment would be increased and the magnitude of potential consolidation settlements would be higher. MTMI is currently implementing a major wick drain program within the tailings basin that will accelerate tailings consolidation.

Surface water diversion ditches around and across the tailings pond will be constructed, as will a permanent spillway structure. The design details of the storm and surface water management structures will be refined at a later date when the effectiveness of the wick drain program has been confirmed and the final elevation and settlement characteristics of the tailings surface can be established. The drainage system and the spillway design will be consistent with standard engineering practices and agency specifications. Additional information regarding capping and revegetation tasks for final reclamation are detailed in the agency approved Plan of Operations (MTMI, 1984) and updated in the 1994 Amendment 005 application (MTMI, 1994).

B. AGENCY MODIFIED ALTERNATIVE

Stability analyses conducted by MTMI (MTMI, 1993) employing modifications requested by the agencies have indicated that the embankment would have adequate post-earthquake stability up to the 5580 foot crest elevation (Figure 5). Additional information and analyses regarding tailings strength following a seismic event would be necessary before the agencies would consider approval of the Company Proposed Action.

Under the Agency Modified Alternative, the agencies would approve expansion of the MTMI embankment to the 5580 foot elevation. Construction to the 5600 foot elevation would be approved only if data from additional in-situ testing resolves agency concerns. The agencies have determined that embankment expansion to the 5580 foot elevation meets the required Factors-of-Safety for static and pseudo-static (post-earthquake) strengths and stability. The agencies have determined that post-earthquake stability, addressed as residual shear strength, would not meet the Factor-of-Safety requirements for the 5600 foot embankment elevation. The agencies will require MTMI to conduct further data collection and analyses of the in-situ conditions of the tailings. The additional data will involve in-situ determination of density, shear strength, pore water pressures, and grain size of the tailings material beneath the upstream portion of the embankment. Review of the additional data will be conducted by the agencies to determine if Factors-of-Safety are adequate to ensure a stable embankment constructed to the 5600 foot elevation.

Embankment Construction Methods

Construction methods under the Agency Modified Alternative would be identical to construction methods under the Company Proposed Alternative.

Final Reclamation

Final reclamation of the tailings impoundment would follow the same scenario as the Company Proposed Alternative. Surface water diversion ditches around and across the tailings pond will be constructed, as will a permanent spillway structure. The design details of the storm and surface water management structures will be refined at a later date when the effectiveness of the wick drain program has been confirmed and the final elevation and settlement characteristics of the tailings surface can be established. The drainage system and the spillway design will be consistent with standard engineering practices and agency specifications. Additional information regarding capping and revegetation tasks for final reclamation are detailed in the agency approved 1986 permit application (MTMI, 1984).

C. NO ACTION ALTERNATIVE

Under the no-action alternative, MTMI would not receive approval to construct the embankment to the 5600 foot elevation. MTMI would be allowed to continue embankment raises up to the presently permitted 5515 foot elevation. Mine life under this alternative would end in 1997.

CAD FILE: \PROJECT\31518\FIG\A66 Scale 1"=100' Plot scale 1=100

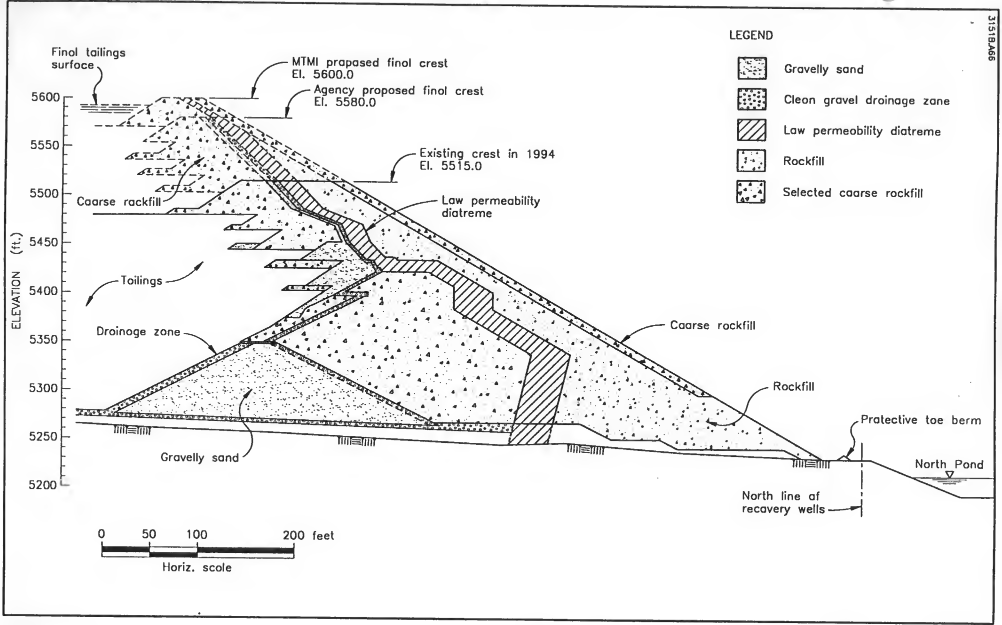


Figure 5

Cross section of MTMI embankment depicting drainage systems and coarse rock zones.

CHAPTER III: AFFECTED ENVIRONMENT

This section of the EA describes those areas of the environment that could be affected by the Company Proposed Action and the Agency Modified Action.

A. SEISMICITY

The Montana Tunnels mine is situated within a seismically active area known as the Intermountain Seismic Belt, and is also included in the Helena seismic regime. The largest seismic event on record in the Helena area occurred in 1935 and registered a Richter Magnitude of 6.3. This seismic event resulted in displacement along the Prickly Pear fault zone that is approximately 20 miles from the project site. The maximum credible earthquake for the entire Helena valley area is estimated to be in the range of 7.0 to 7.5 Richter Magnitude.

B. HYDROLOGY

Currently, there are two lined ponds directly downgradient of the downstream face of the embankment. The North Pond was constructed to receive tailings effluent solutions that flow within the embankment coarse rock drain and underdrain systems. The South Pond was constructed to retain fresh process water used in the milling process. The maximum capacity of the North Pond is approximately 26.2 million gallons. The maximum capacity of the South Pond is approximately 132 million gallons. In addition to the ponds, a total of 29 groundwater and pumpback wells are located immediately downgradient of the embankment.

Water in the North Pond is characterized as very hard calcium-sulphate type water of moderate conductivity, of slightly alkaline pH, low dissolved metals and low nitrate. Total cyanide concentration is less than 0.5 ppm.

A description of surface water hydrology for Homestake Creek, Pen Yan Creek, Wood Chute Creek, and Spring Creek can be found in the 1986 EIS beginning on page III-9. Surface water quality can be found on page III-11. Surface water monitoring indicates MTMI has not affected water quality, water usage, or flows as presented in the 1986 EIS.

C. SOIL

A more detailed description of existing soil units in the tailings impoundment area is found in the 1986 EIS beginning on page III-20. Soil in the drainage below the embankment has been covered by tailings originating from historic mining in the upper Pen Yan Creek drainage. All soil in the anticipated disturbed areas will be salvaged for reclamation.

D. VEGETATION

A detailed survey of vegetation and habitat types for the MTMI mining project is presented on page III-24 of the 1986 EIS. Vegetation in the drainage area below the embankment is dominated by a bentgrass species that is tolerant to acidic soil and will grow in areas disturbed by mining.

E. WILDLIFE

Wildlife studies within the Montana Tunnels project area were conducted in 1984 through 1985. A detailed description of these studies as well as Threatened & Endangered Species is presented in the 1986 EIS starting on page III-28. No change in the overall status of wildlife has occurred since operations began.

F. AQUATICS

For this EA, aquatics will include water plants, macroinvertebrates, algae, and fisheries. A description of the aquatic studies conducted in the streams around Montana Tunnels can be found starting on page III-17 in the 1986 EIS. Mining has not caused any change in these communities.

G. WETLANDS

A wetlands inventory for the MTMI project area was not part of the original baseline study nor were wetlands discussed in the 1986 EIS. A preliminary inventory of wetlands in the impoundment area and the drainage below the embankment was conducted by DSL personnel. Results of this inventory indicate that less than 0.1 acres of potential jurisdictional wetland exists in the northeast gully of the impoundment. Less than an acre of wetlands was identified downgradient of the embankment. The wetland is located in the Homestake Creek/Pen Yan Creek drainage between the South Pond and the permit boundary.

CHAPTER IV: ENVIRONMENTAL CONSEQUENCES

This chapter discusses the potential impacts of each of the alternatives described in Chapter II. The intent of this chapter is to provide a scientific and analytical basis for comparing alternatives. This chapter also includes a summary of the mitigation measures that would be required for the company proposed alternative.

A. EFFECTS OF COMPANY PROPOSED ALTERNATIVE

The Company Proposed Alternative proposes a final crest elevation of 5600 feet. The agencies concluded that under certain post-seismic conditions structural failure of the embankment could occur until dewatering and tailings consolidation diminishes the risk of failure. This conclusion was reached based on the unconfirmed residual strength of the tailings material beneath the upstream portion of the embankment. The following sections describe the possible impacts should embankment failure occur. The impacts are analyzed based on the assumption that embankment failure would result in the discharge of liquified tailings solids and water and subsequent inundation downgradient of the embankment. The upper reach of Spring Creek, an ephemeral stream, would be affected. A preliminary inundation study was conducted based on embankment failure under the Company Proposed Alternative (crest elevation of 5600 feet). Figure 6 depicts the estimated inundation zone.

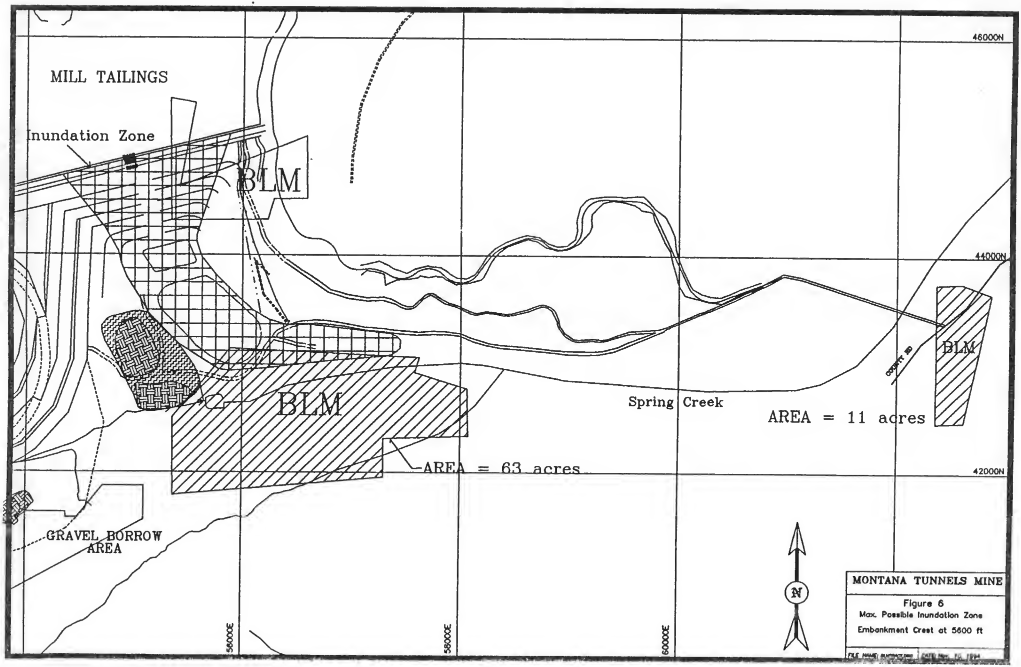
The agencies have determined, based on currently available data, that the post-seismic stability minimum criterion Factor-of-Safety of 1.1 is not met by the Company Proposed Alternative. Calculated Factors-of-Safety are above 1.1 at the permitted crest elevation of 5515 feet and decrease with increasing elevation to 1.1 at 5580 feet. Above 5580 feet, calculated Factors-of-Safety are below 1.1.

Disturbed Acreage

Under the Company Proposed Alternative, the expansion of the tailings impoundment (construction to the 5600 foot elevation) would result in disturbance of 254 acres or an increase of 73 acres over the currently permitted 5515 foot crest elevation (181.2 acres). A total of 6.2 acres would be covered by the abutments and 66.8 acres would be covered by the rise of the pond surface. Based on the preliminary inundation study approximately 28 acres of previously disturbed MTMI controlled land would be inundated, and approximately 11 acres of previously disturbed BLM land would be inundated. Previously undisturbed ground that would be inundated includes approximately 7 acres of MTMI controlled land and approximately 4 acres of BLM land.

Reclamation

Under the Company Proposed Alternative, embankment failure would involve the inundation by tailings and water of an area downgradient of the embankment. The tailings material would be alkaline and contain minor amounts of residual cyanide. Over time, the tailings would become acidic if not reclaimed. Should embankment failure occur during or after final impoundment facility reclamation (as described in MTMI's 1984 Plan of Operations), all completed reclamation tasks would be compromised.



MONTANA TUNNELS MINE

Figure 6
Max. Possible Inundation Zone
Embankment Crest at 5600 ft

Because of the potential for releasing contaminants to the environment, reclamation following an embankment failure would involve the immediate containment and removal of all displaced tailings. The reclamation plan would ensure that the inundated area would be reclaimed in a manner that would safeguard the environment. Reclamation of the inundation zone would involve the removal of all tailings material, contaminated soil, any associated debris, and the subsequent reestablishment of vegetation. In addition, the failed embankment would be reconstructed in order to contain displaced tailings. Reclamation of the embankment and the pond area would then follow the reclamation plans outlined in the Plan of Operations.

Hydrology

The North Pond, South Pond, groundwater monitoring wells, and the pumpback wells would be inundated should a major embankment failure occur. In addition, a maximum total 158.2 million gallons of tailings water and fresh water contained in the North and South ponds respectively, could be displaced downstream by the inundation of tailings material. Although the quality of the water contained in the ponds would not negatively affect the environment, 158.2 million gallons of water could facilitate the downgradient transport of the tailings material. However, a preliminary evaluation has determined that tailings transport downgradient would be limited because of the density of the tailings as well as physical obstructions such as the ponds, roads, and an earthen railroad embankment. Water associated with the failure could flow into the Spring Creek drainage but would not reach the section of Spring Creek that has perennial flow (approximately 2 miles below the projected inundation zone).

Soil

An embankment failure would inundate less than 11 acres of alluvial/colluvial soil in the drainage downstream of the embankment. The drainage has been previously covered with tailings from historic mining activity. It is estimated that less than six inches of tailings could be deposited in the drainage. This would decrease to less than an inch before the drainage area connects with Spring Creek. If the tailings were not removed, existing soil development would cease. MTMI would be required to remove the tailings material as well as any contaminated tailings-soil mixture.

Vegetation

Riparian area vegetation, dominated by bentgrass, in the inundated zone would be partially covered with tailings. In areas where the tailings exceeded 2 inches in thickness, total vegetation failure could be expected from eventual acid production effects. In areas where less than 2 inches of tailings were deposited over soil, not all vegetation would be lost. If the tailings were not removed, it could take up to 100 years for the tailings to acidify and neutralize and revegetate naturally. MTMI would be required to revegetate the inundated zone.

Wildlife

No additional impacts to wildlife beyond what is described in the 1986 EIS would occur as a result of either action alternative. Under the failure scenario associated with the Company Proposed Alternative, some potential cattle grazing acreage and some potential mule deer winter range would be affected for a short duration. Should embankment failure occur, MTMI would

undertake the clean-up of all tailings material and the subsequent reclamation of the inundated zone.

Aquatics

Under the failure scenario associated with the Company Proposed Alternative, an influx of sediments could occur in streams downgradient of the inundated zone. Homestake Creek, Pen Yan Creek, and Wood Chute Creek are considered to be ephemeral in nature, but should a rain event occur prior to MTMI cleaning up tailings from the inundated zone, tailings could be washed down to the perennial reach of Spring Creek.

An increase in suspended sediments can affect aquatic insect physiology, development, and reproduction. Sediments can affect algae and plants in much the same way. Fisheries would be affected if the aquatic insect populations decreased. Given MTMI's commitment to immediate tailings clean up and the distance to the perennial reach of Spring Creek, any impacts to aquatics from tailings sedimentation would be local and short-term.

Wetlands

At the 5600 foot embankment elevation, less than 0.1 acre of potential jurisdictional wetland would be flooded by the rise of the impoundment water. Downstream of the embankment, less than 1 acre of wetland would be inundated should embankment failure occur. A modification to the reclamation plans would be implemented to ensure the impacted wetlands are restored to Corps of Engineers standards.

B. EFFECTS OF AGENCY MODIFIED ALTERNATIVE

The Agency Modified Alternative is the Company Proposed Alternative with mitigations. Under the Agency Modified Alternative, the agencies would limit construction of the embankment to the 5580 foot elevation. Construction of the embankment to the 5600 foot elevation would be approved based on a demonstration that seismic stability of the embankment meets minimum required Factors-of-Safety for the 5600 foot crest elevation. MTMI must demonstrate shear strengths and pore water pressures in the tailings zone immediately upstream of the embankment are sufficient to raise the Factor-of-Safety to 1.1. The stability of the embankment is suspect only at crest elevations above 5580 feet where calculated Factors-of-Safety are below the minimum criterion of 1.1.

The environmental impacts of the Agency Modified Alternative are limited to the acreage disturbed by the embankment and pond raise. Total disturbed acres for the Agency Modified Alternative (construction to the 5580 foot elevation) would be 223.4 acres or an increase of 42.2 acres over the currently permitted 5515 foot crest elevation. Mine life could extend beyond 1997, but the ultimate mine life would be dependent on the amount of tailings consolidation that occurs during the operational life of the facility. The amount of tailings consolidation that occurs would dictate the overall capacity of the facility.

C. EFFECTS OF NO ACTION ALTERNATIVE

With the No Action Alternative, the tailings impoundment would reach a crest elevation of 5515 feet that is the height permitted in the 1990 Amendment 003. Total disturbed acres for the No Action Alternative would remain as currently permitted. The operating life of the impoundment and the mine would be continue until 1997. Approximately 240 employees would be unemployed. The overall environmental impacts are described in the 1990 Amendment 003 EA.

D. UNAVOIDABLE ADVERSE EFFECTS

Under the Company Proposed Alternative, acreage lost as a result of impoundment expansion and short-term acreage lost due to embankment failure are identified unavoidable adverse effects. In addition, the vegetation in the drainage below the embankment would be lost should embankment failure occur. Under the Agency Modified Alternative, acreage lost as a result of impoundment expansion is the only identified unavoidable adverse effect. Under the No Action Alternative, no unavoidable adverse effects have been identified.

E. SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

Land use where the impoundment exists is the only identified issue that has short-term impacts. The short-term land use impact would be mitigated by reclamation of the impoundment. MTMI would be committed to immediate clean-up and reclamation of the inundation zone should embankment failure occur.

F. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

There are no identified irreversible commitments of resources for any of the alternatives. Acreage lost by the impoundment expansion would be replaced by reclamation of the impoundment, so there would be no net loss.

Irretrievable commitment of a resource for both of the action alternatives would include the newly identified 18 million tons of ore that would be mined and processed. Approximately 2 to 6 inches of potentially contaminated soil/tailings would be removed during clean up of the inundated zone.

G. CUMULATIVE IMPACTS

There are no identified cumulative impacts from either action alternative. Embankment failure would result in short-term impacts to the environment because MTMI would be required to clean-up of any discharged tailings material. Acreages disturbed by expansion or failure would be reclaimed.

SUMMARY

This environmental document describes three alternatives associated with the expansion of the tailings impoundment for Montana Tunnels Mining, Inc. The alternatives include the Company Proposed Alternative, the Agency Modified Alternative, and the No Action Alternative. The Company Proposed Alternative would increase the tailings embankment from the 5515 elevation to the 5600 foot elevation. This would allow for the storage of an additional 18 million tons of milled ore. The Agency Modified Alternative would allow for an embankment raise to the 5580 foot elevation. The No Action Alternative would not allow for expansion. The embankment would not expand beyond the presently permitted 5515 foot elevation.

The agencies have determined that the embankment will be stable at the Agency Modified elevation of 5580 feet. The agencies have also determined that the Company Proposed embankment elevation of 5600 feet could be unstable under certain post-seismic conditions. The agencies have requested that MTMI collect additional data of the tailings material directly upstream of the embankment. When this data has been collected and analyzed the agencies will determine if the Company Proposed embankment elevation of 5600 feet would be a stable structure. If the new data shows that the 5600 foot embankment elevation would be a stable structure, MTMI would then be allowed to proceed with their original proposal.

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